GARDINER TECHNOLOGY

GARDTEC®
590 & 591
Control Panels

Installation Instructions

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IMPORTANT!

Input:	**AC230V +/-10% ~50Hz 200mA Max. 49W Max**
Nominal Temp Range:	**0 - 50°C**
	Gardtec *590* / *591* For Indoor Use Only

This equipment is intended only for use as a Security Alarm Control Panel. Adequate ventilation away from heat and humidity must be provided. The unit must be fixed securely to a non-flammable surface using suitable fixings.

All mains wiring must be to BS7671 (1992) IEEE wiring regulations (or appropriate international regulatory standards). See Mains Supply Connection section within this manual for more detailed instructions.

All wiring must be protected from sharp or jagged edges.

All Low voltage (alarm) wiring must be to the appropriate international regulatory standards and comply to good wiring practice.

Replacement fuses should be of the same type and rating conforming to IEC 127.

The maximum current draw from the unit for all output combinations **must not exceed 1Amp.**

The unit is intended for use with a suitable re-chargeable lead acid battery permanently connected to the appropriate terminals.

All documentation and manuals must be thoroughly read by suitably qualified installation personnel prior to installation.

The unit has no user serviceable parts inside. Internal access should only be by suitably qualified personnel.

Provision is provided for an earth connection within the mains input connector block, this connection is for protection of the wiring only and is not functional for the unit.

This equipment is intended to be permanently connected to the mains supply via a non-flexible cable. Where movement of the cable may take place, the installation engineer MUST secure the cable to ensure that disconnected conductors from the mains terminal block cannot come into contact with parts of the equipment that may pose a potential hazard.

1 INTRODUCTION

The Gardtec 590/591 Control Panels incorporate a Modem/Digi Communicator that acts as an interface between the control panel and the Public Switched Telephone Network (PSTN) allowing communications between the control panel and a PC running Gardtec Remote software. The unit may be connected in parallel with existing PSTN sockets or as a serial device. If the serial option is chosen the unit will have the ability to disconnect other telephones on the line whilst the Modem/Digi Communicator is in use. There is also provision for Audio verification via terminals A ON, A IN and A OUT. Connection to these terminals is primarily intended for equipment capable of transmitting/receiving speech. Installation personnel must ensure that the signal into A IN does not exceed 500mV RMS in order to maintain BABT approval. It is also an approval requirement that indication of audio recording is given. Terminal A ON provides an open collector output for this indication and is capable of sinking 40mA.

The equipment has been approved to [Commission Decision "CTR 21"] for pan-European single terminal connection to the Public Switched Telephone Network (PSTN). However, due to differences between the individual PSTNs provided in different countries the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network termination point.

In the event of problems, you should contact your equipment supplier in the first instance.

Line Requirements

If you intend to use the communications features of the Gardtec 590/591 control panel you should check that the following criteria can be met prior to installation.

1) That the telephone line can support DTMF dialling (Tone Dialling).

2) That the unit will not be connected to a 1+1 carrier system.

3) That the unit will not be connected as an extension to a PABX.

4) That no other digital equipment will be used on the same line (Fax etc.)

Terminals A5(IN), B2(IN), C3, B2 and A5 must connect with ports of other equipment eligible for general approval NS/G/1234/J/00003 or otherwise approved for use with the Telephone Network.

It is essential that interconnection circuits should be such that the equipment continues to comply with the requirements of 4.2 of EN41003 for TNV (Telephone Network Voltage) circuits and 2.3 of EN60950 for SELV (Safety Extra Low Voltage) circuits after making connections between circuits.

Due to the advanced features available on this product we would recommend that all the manuals supplied with the unit are read and understood prior to installation.

2 SYSTEM OVERVIEW

User Codes

The Gardtec *590/591* control panels are capable of accepting up to 7 user codes plus 1 engineer code. Each of the user codes is allocated a code type (with the exception of user 1 that is always Master) at the time the code is programmed. Four code types plus engineer are available, these are:-

Type Number	Code Type
1	Set Only
2	Main
3	User
4	Master

Note: User 1 will always be Master.

A full list of options that are available for the code types are given in the user manual.

Zones

The control panel is supplied with 8 zones plus a global tamper for the zones (a separate tamper is also supplied for the bell). All zones are normally closed activating when they are opened. If normally open devices are to be used they may be wired across a closed zone and the tamper loop.

Keypads

The Gardtec 590 control panel may be used with any of the Gardtec 800 Series LED keypads. To simplify programming an LCD keypad may be used with the Gardtec 590 but this feature is limited to engineer programming. LED keypads provide a twin seven segment LED display. An LCD keypad **must** be used to program the Modem/Digi functions.

The Gardtec 591 control panel may be used with any of the Gardtec 800 Series LED or LCD keypads. LCD keypads provide backlit 32 character text display that makes programming and using the system childsplay. An LCD keypad **must** be used to program the Modem/Digi functions.

A maximum of two keypads may be fitted.

The Gardtec 590/591 control panels are also Gardtec ACE and MiniACE compatible. ACE allows for the setting, part setting, unsetting and resetting (if programmed) of the system via Infra-Red remote control keyfobs. ACE is available as a stand alone receiver or built into a RKP.

Uploading/Downloading & Remote System Management

The Gardtec 590/591 control panels are capable of uploading and downloading from both a primary location and secondary location (e.g Laptop computer), this helps reduce maintenance costs and provide improved service levels should there be a need to update the system program or a customer on site having difficulties.

This uploading/downloading capability has the ability to allow for complete Remote System Management.

3 SYSTEM INSTALLATION

Planning The System

Time should be taken to plan the system. Because the master control panel is a blank end station it may be looked upon as an engineer box requiring no attention from the end user. When choosing a location for the master control panel consideration should be given to the following:-

The routing of cables, e.g detection, sounders, mains, telephone line, keypads etc.

Protected area aesthetics in view of the above.

Future access by service personnel.

Consideration also needs to be given as to the positioning of the remote keypads, wiring for the keypads may be 'star' or 'daisy chain' format (see Keypad Wiring for more details). When choosing locations for remote keypads the following points should be observed:-

The proximity of the keypad to the entry/exit point(s).

The operation of the keypad.

The readability of the display.

The wiring route to the keypad.

Gardtec ACE units are operational with a clear line of sight from the transmitter to the receiver at a distance no greater than 3 metres *(1metre for MiniACE).

Control Panel Mounting

Remove the single lid retaining screw situated on the bottom edge of the unit, pull the lid towards you and lift clear of the lid securing lip. Store the lid in a safe place.

Offer the base to the wall and using it as a template mark the three fixing points.

Store the base in a safe place then drill the wall. **Under no circumstances should you drill through the base.**

Before mounting the base to the wall remove any trunking or conduit entries that you require as knockouts.

Mount the base to the wall using 30mm No.8 screws and suitable rawl plugs.

After the installation has been completed refit the lid and secure with the retaining screw(s).

Keypad Mounting

The standard Gardtec *800 Series* keypad is available with a 32 character LCD display(for 591) or with a twin seven segment LED display (for 590). The traditional keypads require the Gardtec *800 Series* RKP Housing Part No. 01-063. Gardtec Contour keypads are supplied as a complete unit for remote mounting.

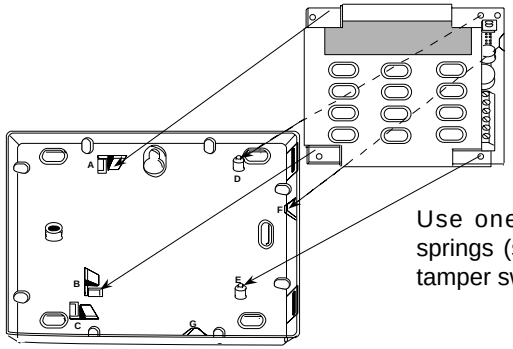
This housing has been designed to allow mounting in one of three positions. These are:-

With the hinged flap to the left. (See Fig 1a.)	Use fixing points A, B, D, E placing edge of board under tab F
With the hinged flap to the right. (See Fig 1b.)	Use fixing points A, C, D, E
With the hinged flap to the bottom. (See Fig 1c.)	Use fixing points A, B, D, E placing edge of board under tab G

The base of the housing should be fixed to the wall using 25mm x No.8 screws and suitable rawl plugs in three positions.
After the keypad has been mounted in the base, the correct spring (supplied with the keypad) should be pushed onto the tamper switch (see Figs 2 & 3 for spring details).

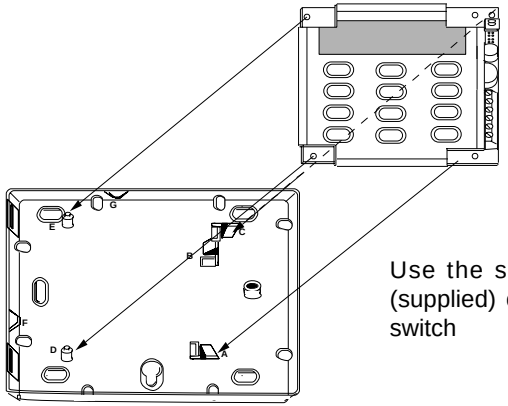
Before replacing the cover move the ident jumper to the correct position.

Fig 1a. Flap to left Standard RKP with Housing Base



Use one of the longer springs (supplied) on the tamper switch

Fig 1b. Flap to right Standard RKP with Housing Base



Use the shorter spring (supplied) on the tamper switch

Fig 1c. Flap to bottom Standard RKP with Housing Base

Use one of the longer springs (supplied) on the tamper switch

The Gardtec Contour and Profile keypads offer a stylish alternative. The Contour has a hinged front cover and the Profile has open style keys.

Fig 3 Contour RKP

Lower Flap to reveal single cover fixing screw. Fixing should be via at least three screws

A stand alone ACE receiver is also available. This receiver will allow for the setting, part setting, unsetting, resetting (if programmed) and activation of alert keys 1 & 3.

To mount the ACE receiver remove the front retaining screw of the receiver that is situated on the underside of the unit, pull the bottom edge of the cover forwards and upwards in one movement. The PCB may now be removed by unclipping it at the bottom edge and lifting clear of the base.

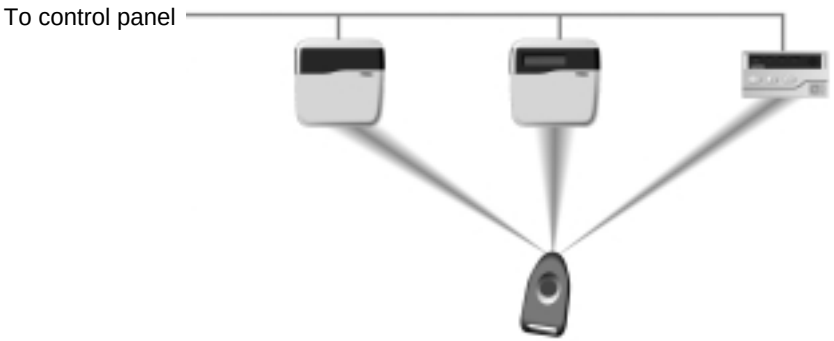
Fig4. ACE Receiver

The base should be fixed to the wall in three positions using 30mm x No.6 screws and suitable rawl plugs.

It should be noted that the ACE receiver may only be used as keypad ident 1 or 2.

The new Contour range of stylish remote keypads are also available for the full Gardtec *590 Series* range of control panels. These keypads are designed to be fitted remote from the main control panel and both the LED and LCD versions are available with MiniACE.

Fig 5 MiniACE



Note: A maximum of two RKPs may be fitted to a system.

4 WIRING CONNECTIONS

With the exception of the mains wiring all interconnections should be made with multicore 7/.02 alarm cable.

Good wiring practice should be observed throughout the installation and the following tips may prove useful.

Never run alarm cables parallel to mains cables, telephone cables or any other cables that may be carrying inductive loads

Whenever you have to cross mains cables with alarm cables ensure that you do so at 90°

Whenever possible wire the mains connection for the control panel back to the consumer unit via a 3A unswitched fused spur.

Never tap into ring main circuits that have fridges/freezers on them.

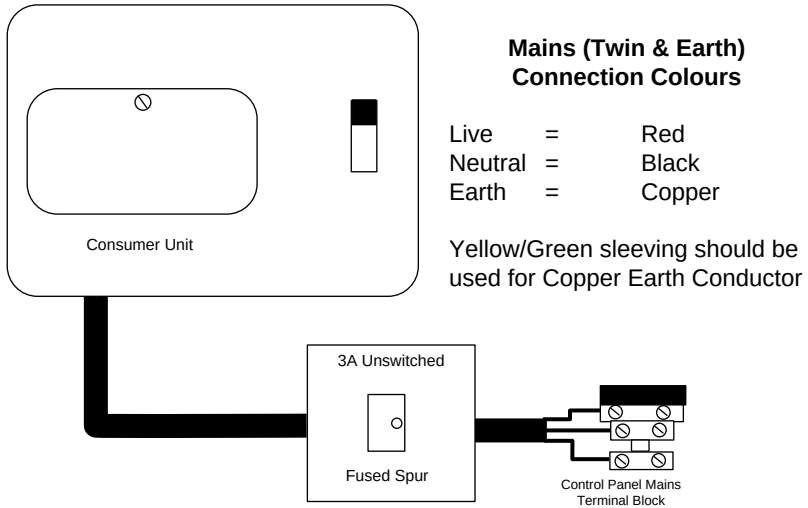
Never tap into lighting circuits that have fluorescent lighting units on them.

Mains Supply Connection

The mains connection for the Gardtec *590 Series* should be as shown in Fig 6.

Fig 6.

Warning the Gardtec *590 Series* control panels MUST BE EARTHED.



Keypad Wiring

Keypads may be wired in 'Star' format (each keypad being wired back to the master control panel) see Fig 7a, or 'Daisy Chain' format (from the control panel to the first keypad then onto the second keypad) see Fig 8.

Fig 7a. 'Star' format wiring.

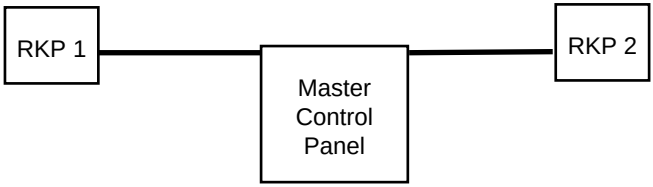
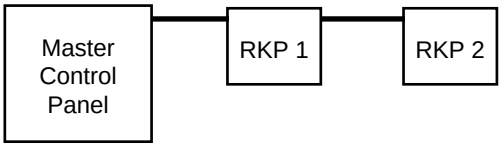


Fig8. 'Daisy Chain' format wiring.



Note: All keypads need to be numbered via the onboard ident jumper switches.

Note: ACE receivers count as RKPs (unless built into RKP).

Keypad Terminal Connections

Some keypads that are compatible with other Gardiner Technology control panels may have additional markings as well as the Gardtec *590/591* legends. These additional markings are disregarded within this manual.

They may also have three extra terminals marked as follows:-

E/E -VE

E/E +VE

TMP+

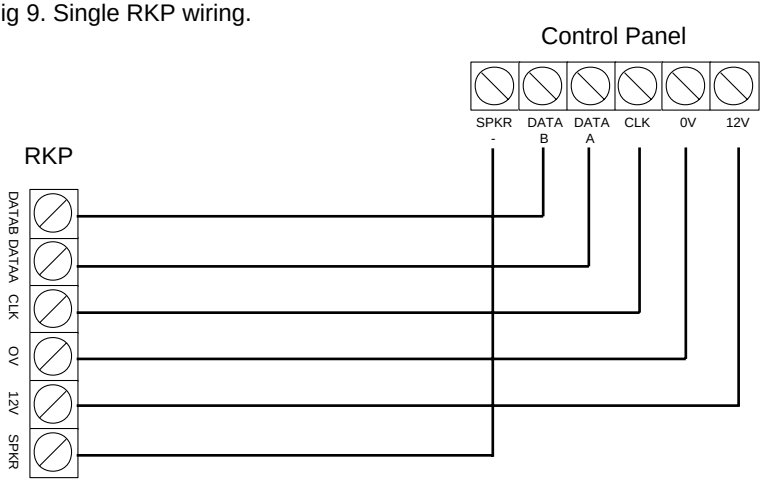
These terminals are not applicable to the Gardtec *590/591* therefore the two factory fitted links to these terminals should be left in place, the links are as follows:-

E/E-VE is linked to E/E+VE

TMP+ is linked to 0V

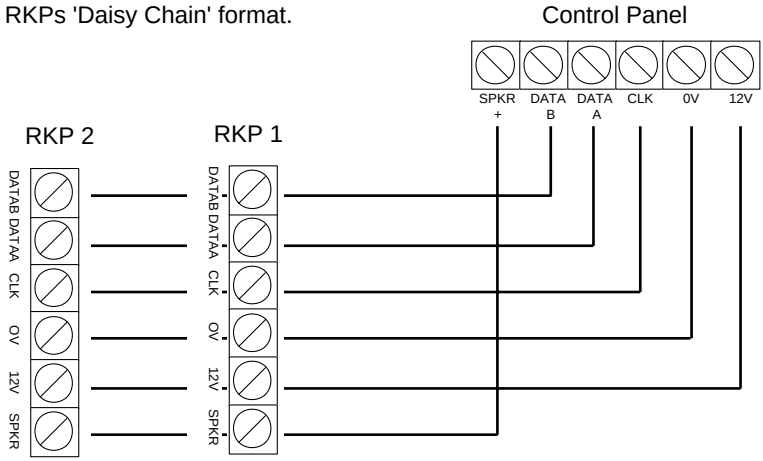
The keypad port on the master control panel is situated on the bottom edge of the PCB towards the right hand side and the speaker terminal is to the left hand side of the PCB. Wiring to the RKP(s) is terminal to terminal as shown in the following illustrations.

Fig 9. Single RKP wiring.



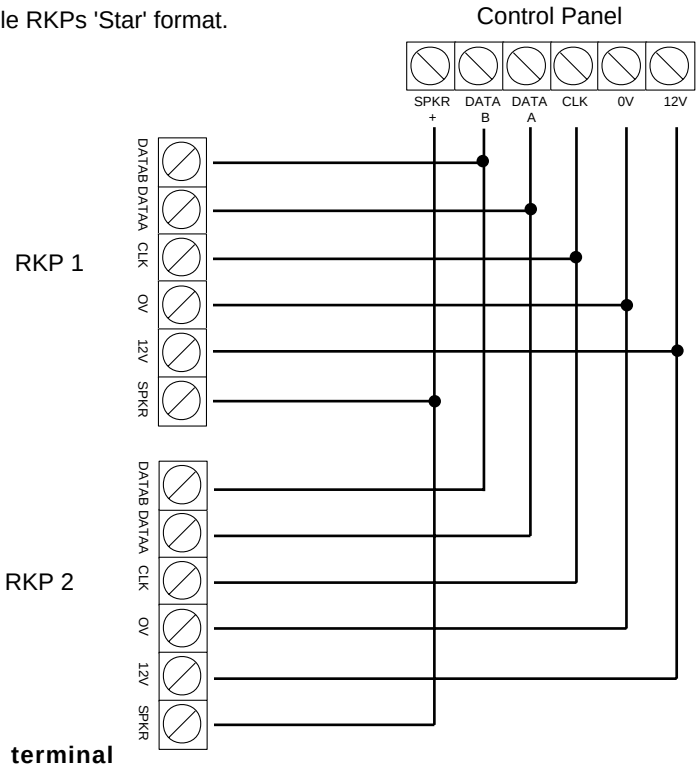
NOTE: RKP terminal positions may differ (dependent on model)

Fig 10. Multiple RKPs 'Daisy Chain' format.



NOTE: RKP terminal positions may differ (dependent on model)

Fig 11. Multiple RKPs 'Star' format.



NOTE: RKP terminal positions may differ (dependent on model)

Keypad Jumper Options

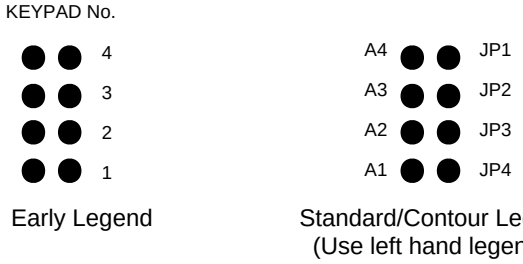
Keypad Numbering (ident)

All keypads must have the ident jumper in position in order that the system can recognise the keypad it is communicating with. This information is written to the log as the system is set and unset. **Note: A maximum of two RKPs may be fitted.**

LCD and LED versions

Four jumper links are fitted on the LCD and LED versions of the keypad, only the first two may be used. On earlier Standard keypads the legend was slightly different as shown in Fig 12.

Fig 12. Keypad ident legends.



Early Legend

Standard/Contour Legend
(Use left hand legend)

Note: Contour keypads that are fitted with ACE have two additional jumpers for the ACE functions, these are:-

US This jumper is the user select. With the jumper link removed each ACE key fob will occupy one user code from the system, this is termed as high security mode.

With the jumper link in position the ACE will occupy one user code from the system but up to fourteen key fobs may be programmed into the ACE, this is normal security mode.

NVM With this jumper in position the NVM contents will be cleared when the unit is powered up. All ACE codes will be lost

The ident jumper should be positioned across the pins in one of the positions **before the system is powered up.**

JP 5 to JP8 (applicable to later multi-purpose keypads only)

Note: some of these jumpers may not be fitted on versions without ACE

JP 5 (US ACE User Select) ACE units only
This jumper is the user select. With the jumper link removed each ACE key fob will occupy one user code from the system, this is termed as high security mode.

With the jumper link in position the ACE will occupy one user code from the system but up to fourteen key fobs may be programmed into the ACE, this is normal security mode.

JP 6 (RST Reset) ACE units only
The ACE has a Non-Volatile Memory (NVM). If power is applied to the unit with this jumper in position, the memory contents will be erased. When the unit is first powered up, this jumper should be in position for at least 5 seconds. After this initial period the jumper link should be removed.

If a reset of the ACE is required (all fobs to be deleted) this jumper link should be refitted and the unit re-powered.

JP 7 (PN Panel Type Select if fitted)
This jumper selects the keypad as Gardtec *580* or Gardtec *800 series* when connecting to the Gardtec 590/591 control panels the *800* option should be chosen. With the jumper in position the keypad will be Gardtec *580* compatible. With the jumper removed the keypad will be Gardtec *800 Series, 590/591* compatible.

JP 8 (EOL if fitted)
This jumper is the End Of Line jumper and is applicable to the Gardtec *350+* and Gardtec *580* only. **This jumper MUST BE REMOVED when used with the Gardtec *800 Series* or Gardtec *590/591*.**

Note: Instructions for how to program keyfobs to the ACE and using ACE are contained within the LED user manual.

ACE Receiver Wiring & Jumper Options

ACE is also available as a stand alone receiver. The wiring for the receiver is the same as for the RKP(s) with the exception that the speaker wiring terminal on the ACE is marked as SP- and **not** SPKR.

The ACE receiver is link selectable as unit No.1 or unit No.2 and it is permissible to have two units sharing the same ident.

Five options are available that are selected with jumper links.These options are as follows.

JP1 (US)
This jumper is the user select. With the jumper link removed each ACE key fob will occupy one user code from the system, this is termed as high security mode.

With the jumper link in position the ACE will occupy one user code from the system but up to fourteen key fobs may be programmed into the ACE, this is normal security mode.

JP2 (RP)
This jumper is only used when the ACE is fitted to the Gardtec *590/591* control panels and is used to select the ACE ident as 1 or 2 . This ident should be viewed as the RKP ident. With the jumper off the ACE will be remote device two, with the jumper fitted the ACE will be device number one.

JP3 (PN)
This jumper is used to select the panel type when ACE is used with the Gardtec *350+* or Gardtec *580* control panels. **The jumper has no use when used with the Gardtec *800 Series* or *590/591* and should be left in position.**

JP4 (RST)
The ACE has a Non-Volatile Memory (NVM). If power is applied to the unit with this jumper in position, the memory contents will be erased. When the unit is first powered up, this jumper should be in position for at least 5 seconds. After this initial period the jumper link should be removed.

If a reset of the ACE is required (all fobs to be deleted) this jumper link should be refitted and the unit re-powered.

JP5 (EOL)
This jumper is the End Of Line jumper and is applicable to the Gardtec *350+* and Gardtec *580* only. **This jumper MUST BE REMOVED when used with the Gardtec *800 Series* or *590/591*.**

Note: Ensure all links are in desired position before powering up the ACE.

Output Connections

The output connections for the Gardtec *590/591* are situated along the bottom edge of the main PCB in the master control panel.

Warning:-
It should be noted that the total output current available for the Gardtec *590/591* is 1 Amp. Any attempt to draw a total current greater than this could result in serious damage to the control panel that is not covered by the manufacturers warranty.

Below is a description of each terminal. The order given is the same as the terminal order on the PCB looking from left to right.

Output Terminal Descriptions

SPKR + & -
These terminals are connected to any extension speakers (min impedance 16 Ohm) that are fitted. The SP+ is the common and SPKR is the output of the amplifier driver.

The SPKR terminal is also connected to the SPKR (speaker terminal) on the RKP(s).

The current drawn by any extension speakers needs to be calculated in the total system current. The current drawn by a 16 Ohm speaker would typically be 300mA.

Fig. 13 Single Speaker

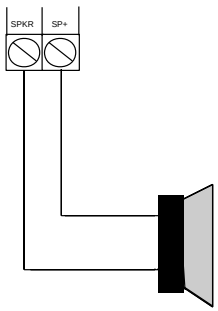
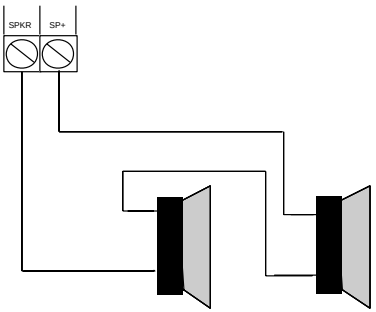


Fig. 14 Twin Speakers (wired in series)



RKP speaker terminals should be fitted to the SPKR+ terminal.

PGM 1 & 2
These two programmable options are open collector outputs capable of sinking up to 50mA (max). The terminals both have a 1K internal pull-up resistor. Detectors requiring a hard 0V to reset should be fitted to PGM1. Please refer to the programming section within this manual for available options.

AUX 12V
This pair of terminals provide the 12V + & - for detectors and other devices requiring power. Care should be taken to ensure the total power requirement does not exceed 1 Amp.

STROBE + | -
This pair of terminals provide power for the strobe light during and after an alarm. The negative terminal is switched. A maximum current of 1Amp*[1] can be switched with these terminals.

BELL + | -
This pair of terminals provide power for the bell during an alarm. The negative terminal is switched. A maximum current draw of 1Amp*[1] is available from these terminals.

The positive terminal also provides the positive hold off for the SAB.

In SCB mode (see Programmable Options Description), the terminals stand at + & -. The negative terminal will change state to positive for the duration of the alarm.

It should be noted that the operation of the bell is influenced by the programmable options Bell Delay, Bell Ring Time and Number of Arms (see Programmable Options Descriptions for more details).

BELL HOLD -
This terminal is the negative tamper feed and also provides the negative Hold Off for the SAB.

The terminal has a factory fitted link fitted to the SAB TMP terminal in order to keep the bell tamper clear. **This link should be removed** as the bell wiring is connected.

SAB TMP
This terminal is the tamper return from the Bell Box. If unused the factory fitted link to Bell Hold- should be left in place.

***1 Care should be taken to ensure the total power requirement does not exceed 1 Amp.**

DATA B
This terminal is the Data B connection for the keypads and ACE units (see Keypad Wiring for more detail).

DATA A
This terminal is the Data A connection for the keypads and ACE units (see Keypad Wiring for more detail).

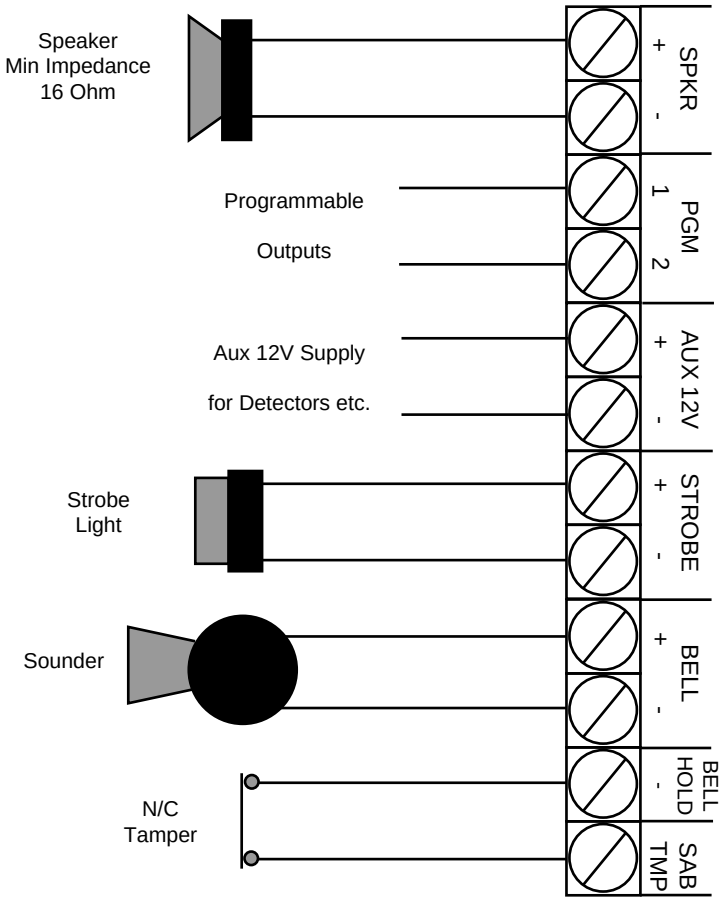
CLK
This terminal is the Clock connection for the keypads and ACE units (see Keypad Wiring for more detail).

RKP 0V
This terminal is the 0V supply for the keypads and ACE units (see Keypad Wiring for more detail).

RKP 12V
This terminal provides the +12V supply for the keypads and ACE units (see Keypad Wiring for more detail). A maximum current draw of 0.5Amp*[1] is available from this terminal.

***1 Care should be taken to ensure the total power requirement does not exceed 1 Amp.**

Fig 15a. Output Connections

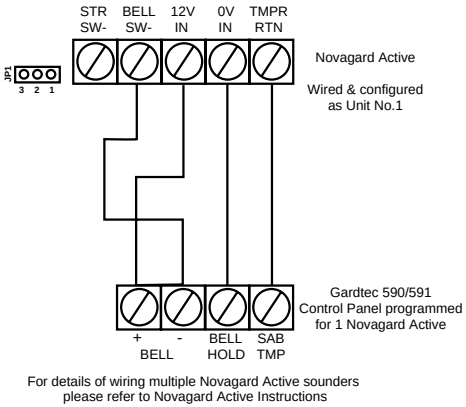


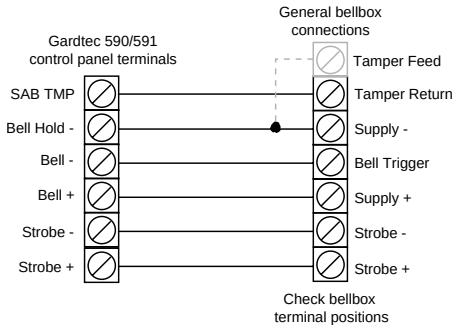
Typical Bell Box Connections

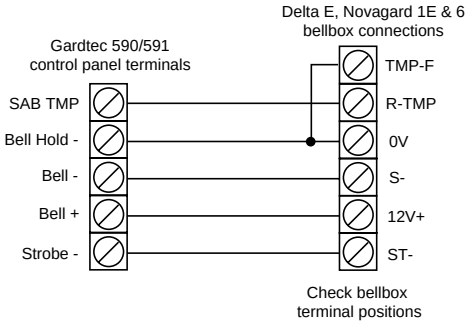
Every effort has been made to ensure the correctness of the diagrams below. You should however check with the Bell Box manufacturers instructions prior to installation.

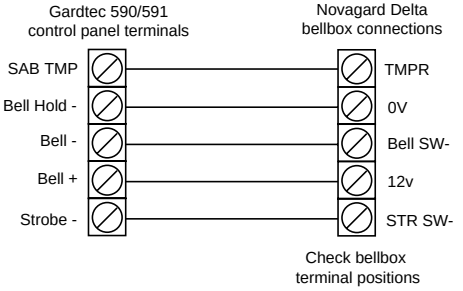
All trademarks are the property of their respective owners.

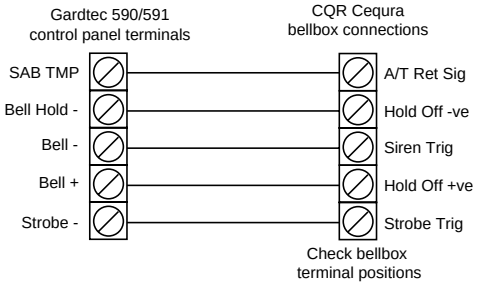
The Gardtec 590/591 may be used with the Novagard Active range of external sounders.When used in Novagard Active mode additional programmable features and diagnostics are available even from a remote location using the Gardtec Remote Software package. Diagnostics help to identify failures or potential failures without the need to send an engineer on a site visit.

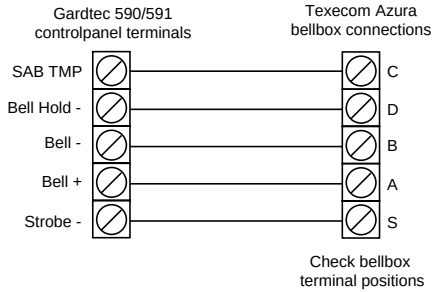


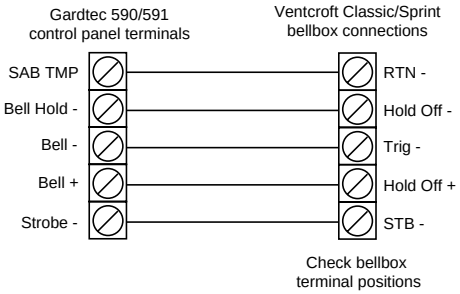


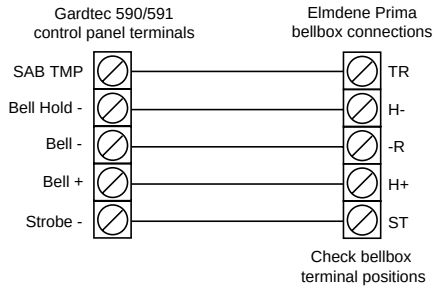





Gardtec 590/591
control panel terminals
CQR Cequra
bellbox connections
SAB TMP
Bell Hold -
Bell -
Bell +
Strobe -
A/T Ret Sig
Hold Off -ve
Siren Trig
Hold Off +ve
Strobe Trig
Check bellbox
terminal positions


Gardtec 590/591
controlpanel terminals
Texecom Azura
bellbox connections
SAB TMP
Bell Hold -
Bell -
Bell +
Strobe -
C
D
B
A
S
Check bellbox
terminal positions


Gardtec 590/591
control panel terminals
Ventcroft Classic/Sprint
bellbox connections
SAB TMP
Bell Hold -
Bell -
Bell +
Strobe -
RTN -
Hold Off -
Trig -
Hold Off +
STB -
Check bellbox
terminal positions


Gardtec 590/591
control panel terminals
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bellbox connections
SAB TMP
Bell Hold -
Bell -
Bell +
Strobe -
TR
H-
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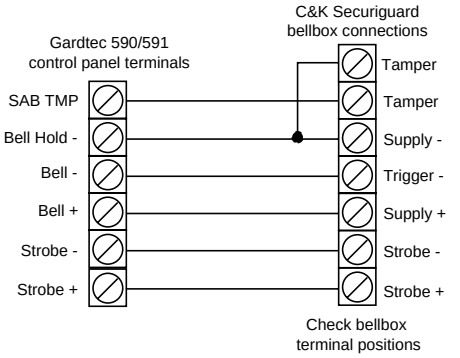
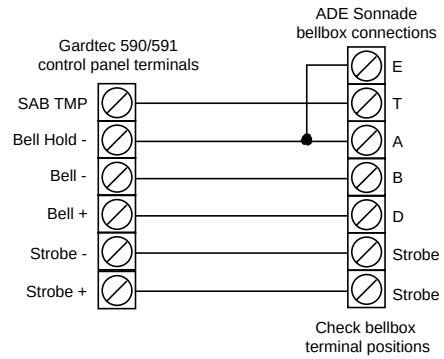
H+
ST
Check bellbox
terminal positions

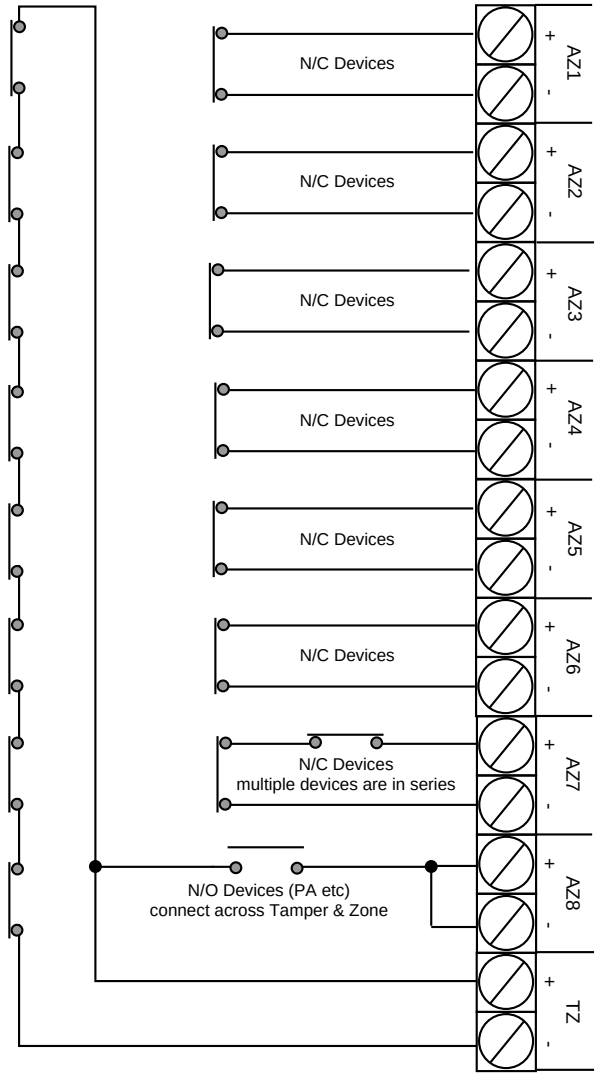

C&K Securiguard
bellbox connections
Gardtec 590/591
control panel terminals
SAB TMP
Bell Hold -
Bell -
Bell +
Strobe -
Strobe +
Tamper
Tamper
Supply -
Trigger -
Supply +
Strobe -
Strobe +
Check bellbox
terminal positions


ADE Sonnade
bellbox connections
Gardtec 590/591
control panel terminals
SAB TMP
Bell Hold -
Bell -
Bell +
Strobe -
Strobe +
E
T
A
B
D
Strobe -
Strobe +
Check bellbox
terminal positions

Input Connections (4 Wire Zones)

Eight zone inputs are available plus a global tamper for the zones. All zones are normally closed loops and any unused zones should have the factory fitted link fitted. If normally open devices are to be used (for example some PAs) they should be wired across the zone and tamper loops as shown in Fig 16.

Fig 16. Four Wire Zone Wiring



Input Connections (EOL Zones)

For higher security the unit may be programmed as End Of Line (EOL). In this mode eight zones are available using a 4k7 resistor in series and a 6k8 resistor across each zone. The 4k7 End Of Line resistor should be fitted at the detector end.

Fig 16a End Of Line Zone Wiring

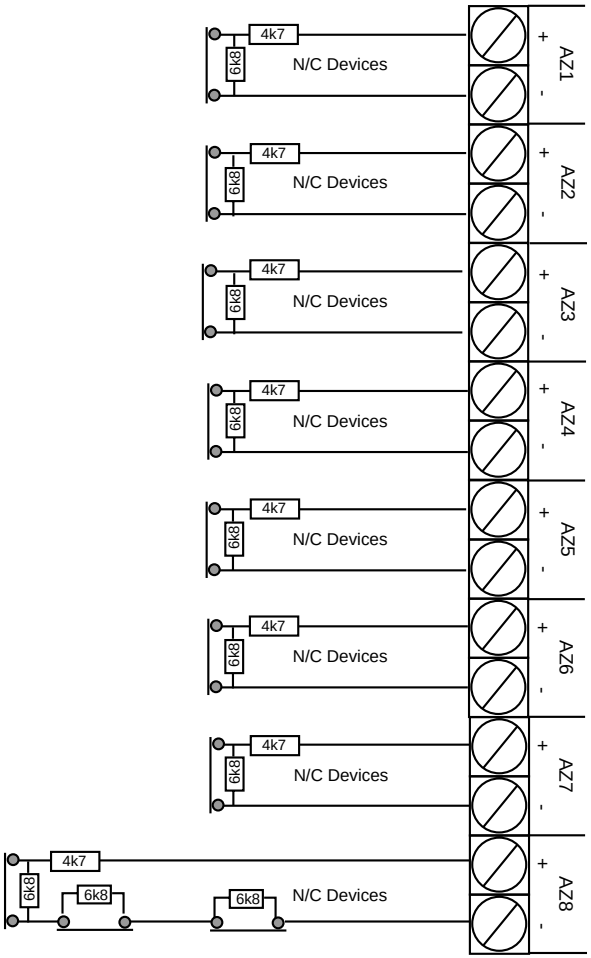
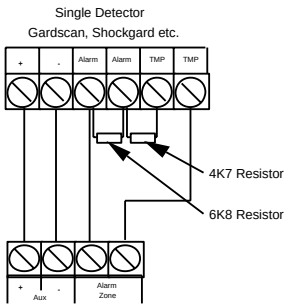
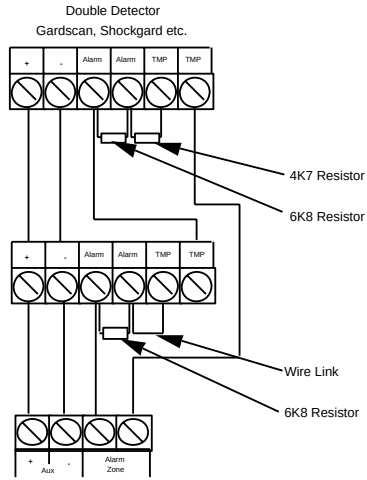
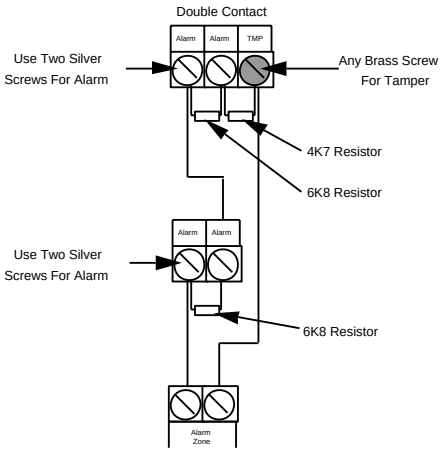
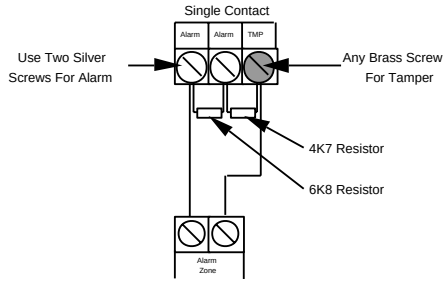


Fig 16b. Typical EOL Applications







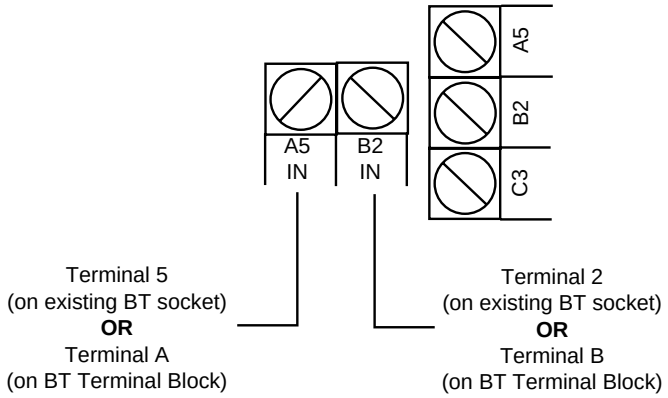


Note: Maximum number of detectors per zone = 4

Telephone Wiring

The Gardtec 590/591 may be wired in parallel with existing sockets (as if it was an extension telephone) as shown in Fig 17.

Fig 17. Telephone Wiring (Parallel Mode)

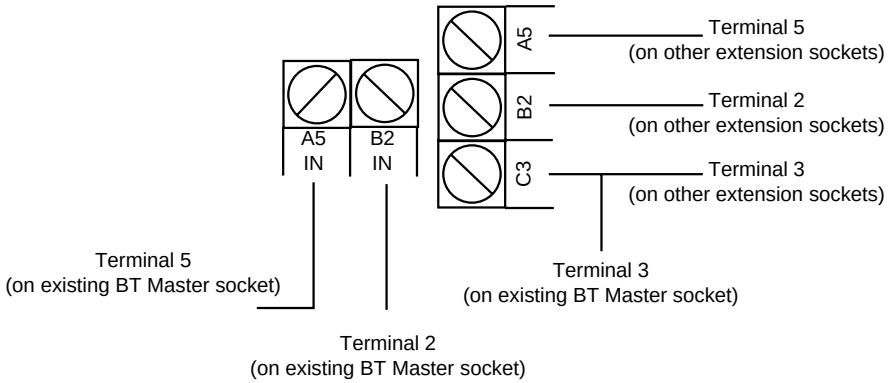


OR
The unit may be plugged into an existing socket via the RJ11 socket on the rear of the main PCB.

IMPORTANT: Where Serial Mode is used, the installation engineer is responsible to ensure that the installation is compliant with all local country telephone wiring regulations.

The Gardtec 591 may also be wired in parallel mode as shown above or in serial mode. In serial mode the unit will disconnect any other extensions on the line when the Modem/Digi is in use. When you intend to use this configuration ask the local telephone operating company to supply a NTE 5B (Master socket with blank front plate) adjacent to the control panel.

Fig 18. Gardtec 591 Telephone Wiring (Serial Mode)



Audio Equipment Wiring

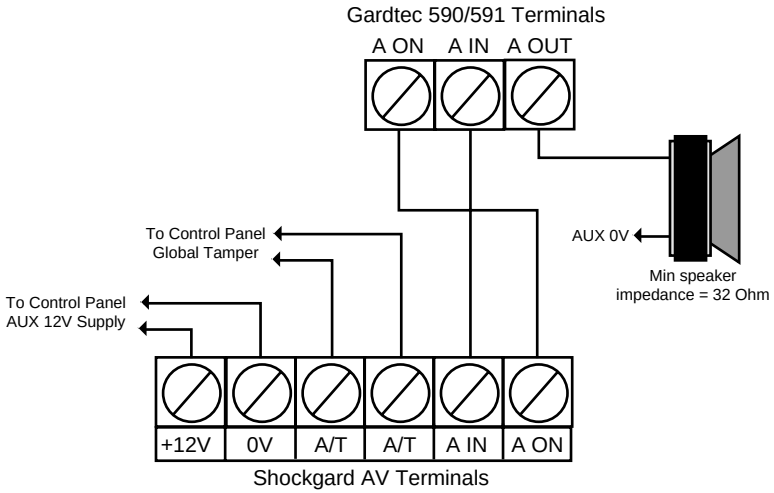
Typical connection of audio equipment is shown below in Fig 19. The following criteria **must** be met.

1) The maximum input to the A IN terminal on the control panel must not exceed 500mV rms

2) When in use indication that the microphone is in use must be given (this is achieved by connecting the A ON terminal on the panel to the A ON terminal on the audio unit).

Failure to meet this criteria will invalidate the BABT approval for the product.

Fig 19. Gardtec 590/591 to Shockgard AV



IMPORTANT:
Due to 'Privacy Regulations' it is a requirement that an indication is provided when audio monitoring is in operation. The installation engineer is responsible to ensure that the installation is compliant with all local country privacy regulations. Terminal A ON provides an open collector output for audio operation indication and is capable of sinking 40mA.

Where this feature is implemented, the installation engineer shall inform the occupiers of the premises regarding this facility.

Zone Type Terminology

Each zone has a default type that may be re-programmed. Below is an explanation of the terminology used for zone types.

12 Hour

Zone active when Control Panel is Set.

Access

Will allow to pass through on exit.
Will allow to pass through on entry only if E/E is opened first.

24 Hour

Internal Sounder if Unset.
Full alarm if Set.
Remains active in Engineer Programming Mode.

Entry/Exit (or E/E)

Zone used as last exit point (will terminate exit time if setting mode is set to E/E or Time+E/E).
Will start E/E time if opened when Control Panel is Set

Part E/E

As Access if Control Panel is Full Set
As Entry/Exit if Control Panel is Part Set

Panic

24Hour Personal Attack (or Panic Attack). Active if Control Panel is Set, Unset or in Engineer Programming Mode . May only be tested via Engineer code if programmed as testable.

Alert

Internal Sounder Only, Recorded to Log when Unset
Recorded to Log when SET

Fire

Will give Fire alarm when activated (pulsed sounders) with Control Panel Set or Unset.
Remains active in Engineer Programming Mode.

ET

Exit terminator. Used for final setting of the system. Exit Mode must be programmed for ET or Time + ET.

Monitor

Will write to the log once only in any one set or unset unless chime is allocated then all activations are written to the log.

Resetting to Factory Defaults

When resetting the Gardtec *590/591* to factory defaults several levels of resetting are available, these are:-

a) Pressing **1, 9, YES, NO** during initial power up will revert the Master Code and Engineer Code (not locked engineer code) back to factory defaults.

b) Pressing **3, 7, YES, NO** during initial power up will revert all system settings back to defaults with the exception of the User Names and Zone Descriptors.

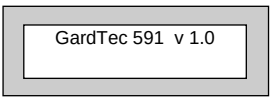
c) Pressing **4, 6, YES, NO** during initial power up will revert all system settings back to factory defaults.

d) Pressing **5, 5, YES, NO** during initial power up will revert all system settings to factory defaults and will also set the comms options up for Gardtec Remote. ie Modem On; No Return. **For commissioning systems for use with Gardtec Remote use this option.**

To effect a reset of the factory defaults:-

1) Remove all power from the system for at least ten seconds

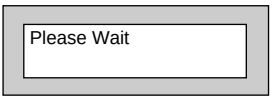
2) Apply power to the control panel (mains power) the display will show:-
(Display will differ dependant on panel)



LED Display = **10**

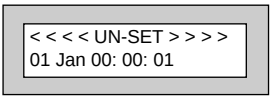
3) Whilst this display is showing (the first eight seconds) press the keys shown in a, b or c for the reset required, the display will show:-

!This may show for several minutes !



LED Display = **bJ**

4) The display will then show:-



LED Display = **Un**

If you intend to use Gardtec Remote Software to program the unit use the 5 5 YES NO default procedure to set the required parameters.

Using LCD keypad for programming Gardtec 590

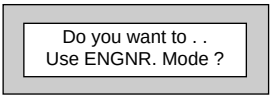
The Gardtec 590 operation is via LED keypads. Some programming options in the Digi/Modem are not available via LED keypads. Provision is made for use of LCD keypads for programming the Gardtec 590. Using an LCD keypad simplifies programming as all the options are displayed via the 32 character display. If you do not wish to use the LCD keypad for programming the Digi/Modem options may still be programmed via Gardtec Remote.

a) Ensure that the ident for the LCD keypad is different from any LED keypads on the system.

b) Connect the LCD keypad to the control panel as shown in the keypad wiring section.

c) The display will initially be blank.

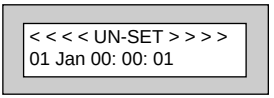
d) Enter the Engineer code (1234 default)
The display will show:-



e) Continue from step 3 below

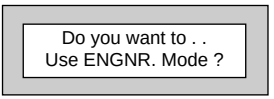
Programming Methods

1) With the display showing:-



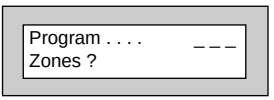
LED Display = Un

2) Enter the Engineer code (1234 default)
The display will show:-



LED Display will flash = En

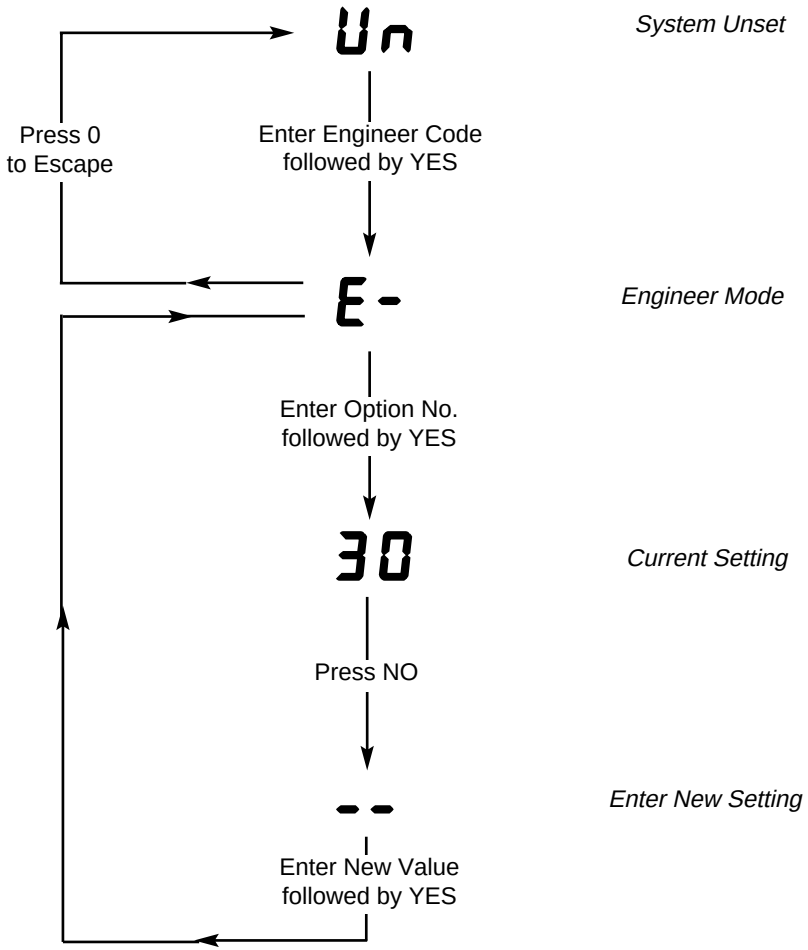
3) Press YES. The display will show:-



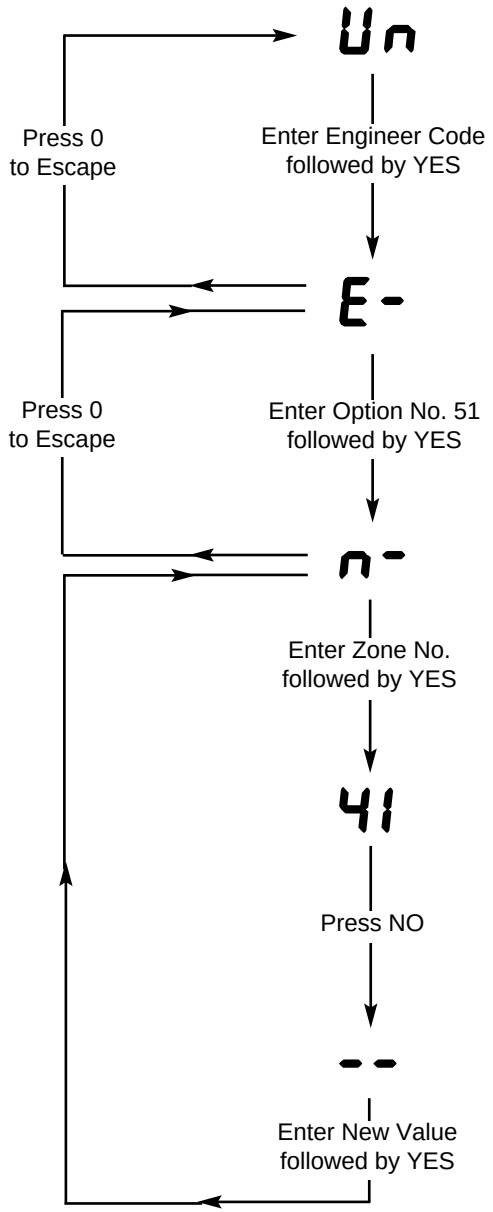
LED Display = E-

You are now in Engineer Programming Mode.

When Programming via an LED keypad the **E-** is prompting you to enter an option number from the programmable options chart. Shown below is the flow chart for programming via LED keypads.

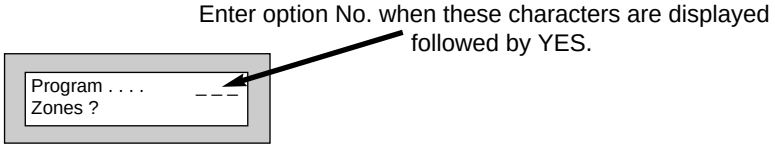


The flow chart above is used for the majority of options. Some options, for example zone programming require an extra input stage. This is shown in the following flow chart.


Un
System Unset
Press 0
to Escape
Enter Engineer Code
followed by YES
E-
Engineer Mode
Press 0
to Escape
Enter Option No. 51
followed by YES
Option 51 = Zone Type
n-
Prompt for
Zone Number
Enter Zone No.
followed by YES
41
Current Setting
Press NO
--
Enter New Setting
Enter New Value
followed by YES

Two methods may be used when programming via an LCD RKP

a) At any point when three underscores are shown on the display enter an option number from the programmable options chart followed by YES to jump directly to the required option



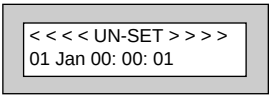
b) Scroll through the available options using the YES and NO keys.

Throughout the programming the zero key may be used to escape back to the previous level unless a numeric input is expected, in this instance complete the numeric input before using the zero key to escape.

To Escape from Programming Mode

1) Check the display to ensure the unit is not expecting a numeric input.

2) Press 0 (zero) until the display shows:-



LED Display = Un

Note: Throughout this section all reference to settings and defaults applicable to LED only displays are given within brackets e.g ( ).

Programmable Options Chart

Option No/ Description	Available Options	Default
1 **PGM 2 Mode**	(00) Off (01) Pulse-Off (02) Pulse-On (03) Set (04) Alarm (05) After Alarm (06) Unset (07) Pulse-On-Set (08) Part-Set (09) Walk-Test (10) Mains Fail (11) Bell (12) Strobe (13) Latch (14) Any Digi (15) Int. Sndr (16) E/E (17) Timed (18) Alert (19) Alarm B (20) Abort (21) Fire (22) PA (23) Tamper (24) Zone Tamper (25) Power Fail (26) Watchdog	Pulse Off **(00)**
2 **PGM Turn On Time (HRS)**	00 - 23 (Hrs) Note: This option is applicable to PGM1 & PGM2	**(00)** Hrs
3 **PGM Turn On Time (MINS)**	00 - 59 (Mins) Note: This option is applicable to PGM1 & PGM2	**(00)** Mins
4 **PGM Turn Off Time (HRS)**	00 - 23 (Hrs) Note: This option is applicable to PGM1 & PGM2	**(00)** Hrs
5 **PGM Turn Off Time (MINS)**	00 - 59 (Mins) Note: This option is applicable to PGM1 & PGM2	**(00)** Mins
6 **PA Test**	(00) Testable (01) Non-Testable Only applies to Test when accessed from Engineer Code	Non-Testable **(01)**
7 **PA Mode**	(00) Silent (01) Bells if Linefault (02) Bells Only (03) Bells Always	Bells Only **(02)**
8 **Chime Level**	0 - 9	5 **(5)**
9 **Entry/Exit Level**	0 - 9	**5** **(5)**

	Programmable Options Chart	
Option No/ Description	**Available Options**	**Default**
10 **Part Set Sounders**	(00) Always Audible (01) Silent If Part 1 (02) Silent If Part 2 (03) Silent If Part 3 (04) Always Silent	Always Audible **(00)**
11 **Final Set Delay**	00 - 99 Seconds	03 Seconds **(03)**
12 **Full Set Exit Time**	00 - 99 Seconds	30 Seconds **(30)**
13 **Part1 Exit Time**	00 - 99 Seconds	30 Seconds **(30)**
14 **Part2 Exit Time**	00 - 99 Seconds	30 Seconds **(30)**
15 **Part3 Exit Time**	00 - 99 Seconds	30 Seconds **(30)**
16 **Full Set Mode**	(00) Exit Terminator Button (01) Entry/Exit Door (02) Time + Entry/Exit Door (03) Time	Time **(03)**
17 **Part1 Set Mode**	(00) Exit Terminator Button (01) Entry/Exit Door (02) Time + Entry/Exit Door (03) Time	Time **(03)**
18 **Part2 Set Mode**	(00) Exit Terminator Button (01) Entry/Exit Door (02) Time + Entry/Exit Door (03) Time	Time **(03)**
19 **Part3 Set Mode**	(00) Exit Terminator Button (01) Entry/Exit Door (02) Time + Entry/Exit Door (03) Time	Time **(03)**
20 **Alert 1 Mode**	(00) Fire (01) P.A (02) Alert (03) Off **Note: This feature must be enabled using option No.56**	Off **(03)**
21 **Alert 2 Mode**	(00) Fire (01) P.A (02) Alert (03) Off **Note: This feature must be enabled using option No.57**	Off **(03)**

	Programmable Options Chart	
Option No/ Description	**Available Options**	**Default**
22 **No of RKPs**	**(Left Digit LED)** Always 0 **(Right Digit LED)** 1 - 2 Number of Keypads	1 Keypad **(01)**
23 **No. Of Bell Arms**	00 - 99 Activations **Note: If this option is programmed to 0 the Bell will not activate**	99 Activations **(99)**
24 **Bell Ring Time**	00 - 99 Minutes **Note: If this option is programmed to 0 the Bell will not activate** **Note: Local environmental legislation should be checked**	20 Minutes **(20)**
25 **Bell Delay Time**	00 - 99 Minutes **Note: Bell delay is overridden in the event of a linefault**	00 Minutes **(00)**
26 **Bell Type**	(00) SCB (01) SAB **Note: Novagard Active must be programmed via LCD RKP or Gardtec Remote**	SAB **(01)**
27 **Bell Tamper Ring**	(00) Off (01) On	On **(01)**
28 **Entry Time 1**	00 - 99 Seconds	30 Seconds **(30)**
29 **Entry Time 2**	00 - 99 Seconds	10 Seconds **(10)**
30 **Digi Start Delay**	00 - 99 Seconds **Note: Digi Start Delay applies to Part Set system**	00 Seconds **(00)**
34 **Digi Type**	(00) Mod+ff (01) Mod+PID **Notes:** Gardtec 590 is fixed as Mod+FF other Modem/Digi functions should be programmed via LCD RKP or Gardtec Remote.	Mod +FF **(00)**
35 **Key Beep Volume**	00 - 09	Activations **(05)**

	Programmable Options Chart	
Option No/ Description	**Available Options**	**Default**
37 **D/Knock Time Window**	00 - 99 Minutes	01 Minutes **(01)**
38 **Engineer Code**	4 - 6 Digits	1234 **(1234)**
40 **Linefault Sounders**	(00) 24Hr (01) Always Off (02) On If Set (03) On If Unset (04) FLT If Off (05) Beep If Off **Note: If Modem or ProDigi is used on shared line program Linefault Sounders to On If Set or Off.**	Always Off **(01)**
41 **Linefault In Exit**	(00) Detect In Exit (01)Ignore In Exit **Note: Detect In Exit will prevent setting of system if a Linefault is present. Ignore In Exit will only warn.**	Ignore In Exit **(01)**
42 **Linefault Log**	(00) Off (01) Limited (02) Exit/Set (03) 24 Hrs	Limited **(01)**
43 **Duress Mode**	(00) Off (01) On	On **(01)**
44 **PGM 1 Mode**	As PGM2 Mode (See Option No. 1)	Pulse Off **(00)**
45 **Internal Sounder Mode**	(00) Constant (01) Timed **Note: The term Internal Sounder refers to the Speaker Output**	Constant **(00)**
46 **Alarm Reset**	(00) Any Code (01) Master Code (02) Anti-Code (03) Engineer Code (04) Engineer + Anti-Code (05) Main Code	Master Code **(01)**
47 **Tamper Reset**	(00) Any Code (01) Master Code (02) Anti-Code (03) Engineer Code (04) Engineer + Anti-Code (05) Main Code	Any Code **(00)**
48 **Backlight Mode**	(00) Off (01) On If Key pressed (02) On In E/E or if Keypressed (03) Always On	On in E/E or if Keypress **(02)**

Programmable Options Chart

Option No/ Description	Available Options	Default
49 **Zone Re-Arm**	(00) Off (01) On **Note: This option determines zone rearm after an alarm**	On **(01)**
50 **Zone Wiring**	(00) 2 Wire (01) End of Line (E.O.L)	2 Wire **(00)**
51 **Zone Types, Zone Remove, Zone D/Knock** Enter zone No. followed by YES to gain access to zones. When finished use 0 to escape	**(Left Digit LED)** (0) 12Hr (1)Entry/Exit (2) Access (3) Panic (4) 24Hr (5) Fire (6) Alert (7) Exit Terminator Button (8) Part Entry/Exit (9) Monitor **(Right Digit LED)** (0) Removable (1) Non-Removable (2) Removable D/Knock (3) Non-Removable D/Knock (4) Off (5) Normal Key Zone (6) Biased Key Zone **Note: Refer to option 52 for zone attributes.** **Note: Refer to option 71 for Area and Chime attributes.**	Zone1 E/E Non-Rem Zone2 Access Non-Rem **Z1 (11)** **Z2 (21)** All Others 12Hr Non-Rem **(01)**
52 **Test/ Part Sets/**	**(Left Digit LED)** (0) Full Set (1) Part 1 Set (2) Part 2 Set (3) Part 3 Set (Parts 1&2) **(Right Digit LED)** (0) Off Test (1) On Test **Prompt for LED is n- Enter zone No YES then setting YES** **For LED Chime is via option 71** For LCD screens press NO to initial screen, then enter zone No followed by YES or NO to add or remove zone in Test or Part screens.	Off Test **(00)**
53 **Service Timer**	(00) Off (01) On **This option should be used in conjunction with option 54**	Off **(00)**
54 **No. Weeks to Service**	00 - 99 Weeks **This option should be used in conjunction with option 53**	00 Weeks **(00)**
55 **Zone Log Limit**	(00) Off (01) On	On **(01)**
56 **Enable Alert 1 Keys 1&3**	(00) Off (01) On **Note: Use option 20 to select mode of Alert 1 Keys**	Off **(00)**

	Programmable Options Chart	
Option No/ Description	**Available Options**	**Default**
57 **Enable Alert 2 Keys 7&9**	(00) Off (01) On **Note: Use option 21 to select mode of Alert 1 Keys**	Off **(00)**
58 **Digi Channel 1 Mode**	(00) Off (01) Zone Tamper (02) General Tamper (03) Alert (04) Fire (05) Part-Set (06) Open/Close (07) Panic (08) Alarm (09) Alarm B (10) Alarm Abort (11) 12V Power Fail (12) Watchdog (13) Mains Fail	Off **(00)**
59 **Digi Channel 4 Mode**	**As Option 58 (Digi Channel 1 Mode)** **For LCD use YES key to move to desired channel and the NO key to change the setting for the selected channel.**	**(00)** Off
60 **Digi Channel 5 Mode**	**As Option 58 (Digi Channel 1 Mode)** **For LCD use YES key to move to desired channel and the NO key to change the setting for the selected channel.**	Off **(00)**
61 **Digi Channel 6 Mode**	**As Option 58 (Digi Channel 1 Mode)** **For LCD use YES key to move to desired channel and the NO key to change the setting for the selected channel.**	Off **(00)**
62 **Digi Channel 7 Mode**	**As Option 58 (Digi Channel 1 Mode)** **For LCD use YES key to move to desired channel and the NO key to change the setting for the selected channel.**	Off **(00)**
63 **Digi Channel 8 Mode**	**As Option 58 (Digi Channel 1 Mode)** **For LCD use YES key to move to desired channel and the NO key to change the setting for the selected channel.**	Off **(00)**
64 **Comms in Part Alrm/ Restore/ Abort**	**(Left Digit LED)** **(Right Digit LED) Abort Time** (0) Restore Off / Part Alarm Comms Off 0 - 9 x 20 Secs (1) Restore On / Part Alarm Comms Off e.g 1=20 Secs 2=40 Secs..... (2) Restore Off / Part Alarm Comms On (3) Restore On / Part Alarm Comms On	Restore Off Part Alarm Comms On Abort=60 Secs **(23)**
65 **Digi Test Mode**	Once in test mode with LCD display will show the number of channels available press the corresponding number keys to activate and again to restore, (the number of channels shown is dependant on the type of communicator programmed e.g 4 for Normal Digi, 8 for Modem or ProDigi Once in test mode with LED display will show C- press the number keys corresponding to the desired channel to activate and again to restore. **Note: No access to test mode with an outstanding Alarm** **Note: With both types of display use the 0 key to escape test mode.**	
66 **Entry/Exit Zone in Part Set**	(00) Entry/Exit zones are Entry/Exit in Part Set (01) Entry/Exit zones are 12Hr in Part Set **This option determines how ALL E/E zones will act in Part-Set(s)**	Entry/Exit in Part Set **(00)**

Programmable Options Chart

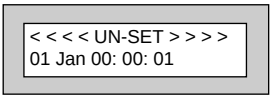
Option No/ Description	Available Options	Default
67 **Engineer Code Lock-In**	(00) Unlocked (01) Locked **Note: Caution should be used with this option, once the engineer code has been locked-in it may only be unlocked/changed by use of the programmed code.** **DEFAULTING THE PANEL WILL NOT UNLOCK THE CODE.**	Unlocked **(00)**
68 **Strobe Setting Confirmation**	(00) Off (01) Full Set Only (03) Any Set **Note: If this option is used the strobe will confirm the final setting of the system.**	Off **(00)**
69 **Auto Part Set**	(00) Off (01) On **Note: To use this option the setting mode must be programmed to Time + E/E. If the E/E door is opened/closed during the exit period the system will full set, if not the system will part set 1.**	Off **(00)**
70 **Part Set Bells**	(00) Off (01) On **Note: If part set bells are programmed to OFF no bell output will be given when the system is PART-SET.**	On **(01)**
71 **Programming Chime Allocation For LED Only Displays**	**(Left Digit LED)*1** Always 0 **(Right Digit LED)*2** (0) Chime Off (1) Chime Melody 1 On (2) Chime Melody 2 On **For LED Prompt is n- Enter zone number followed by YES then enter setting required followed by YES** ***1Note: With LCD this option will appear the same as option 51** ***2Note: With LCD chime is via the Part/Test/Chime option 52.**	Chime Off **(00)**
97 **View Event Log**	Last event shown first use NO key to move back through log & YES key to move forward. Use 0 to escape Also diagnostics for use via LCD Keypad	
131 **Novagard Active Mode**	(00) Off (01) On **Note: If this option is set to On Novagard Active must be fitted.**	Novagard Active Off **(00)**
132 **Novagard Active 1 On/Off**	(00) Off (01) On **Note: If this option is set to On Novagard Active must be fitted. If more than one Novagard Active is fitted use LCD or Gardtec Remote for programming.**	Novagard Active 1 Off **(00)**
133 **Novagard Active 1 Tamp Tone**	(00) Tamper Tone 0 (01) Tamper Tone 1 (02) Tamper Tone 2 (03) Tamper Tone 3 **Note: If more than one Novagard Active is fitted use LCD or Gardtec Remote for programming.**	Novagard Active 1 Tmp Tone **(00)**
134 **Novagard Active 1 Panic Tone**	(00) Panic Tone 0 (01) Panic Tone 1 (02) Panic Tone 2 (03) Panic Tone 3 **Note: If more than one Novagard Active is fitted use LCD or Gardtec Remote for programming.**	Novagard Active 1 PA Tone **(00)**
135 **Novagard Active 1 Alarm Tone**	(00) Alarm Tone 0 (01) Alarm Tone 1 (02) Alarm Tone 2 (03) Alarm Tone 3 **Note: If more than one Novagard Active is fitted use LCD or Gardtec Remote for programming.**	Novagard Active 1 Alrm Tone **(00)**

	Programmable Options Chart	
Option No/ Description	**Available Options**	**Default**
136 **Novagard Active 1 LED Pattern**	(00) LED Pattern 0 (01) LED Pattern 1 (02) LED Pattern 2 (03) LED Pattern 3 **Note: If more than one Novagard Active is fitted use LCD or Gardtec Remote for programming.**	Novagard Active 1 LED Pat **(00)**
137 **Novagard Active 1 Set Confirm**	(00) Off (01) Strobe (02) Sounder (03) Sounder + Strobe **Note: If more than one Novagard Active is fitted use LCD or Gardtec Remote for programming.**	Novagard Active 1 Confirm **(00)**
139 **Battery Test Time**	00 - 99 Hrs **Note: 00 = Off. Battery will be tested at time set and also each time you exit from engineer programming mode.**	Battery Test Time 1 Hr **(01)**

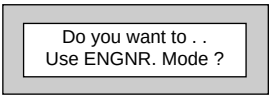
Diagnostics

The Gardtec 590/591 control panels have several engineering diagnostic features available via an LCD keypad. To access these diagnostics follow the steps below

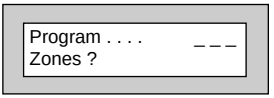
1) With the display showing:-



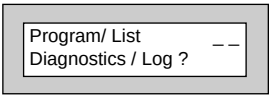
2) Enter the Engineer code (1234 default)
The display will show:-



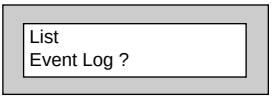
3) Press YES. The display will show:-



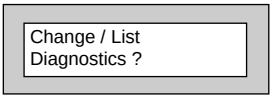
4) Press NO until the display shows:-



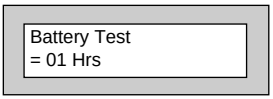
5) Press YES. The display will show:-



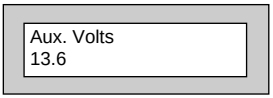
6) Press NO. The display will show:-



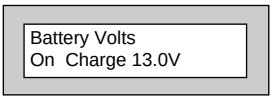
7) Press YES. The display will show for example:-



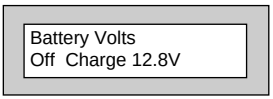
8) Press YES. The display will show for example:-



9) Press YES. The display will show for example:-



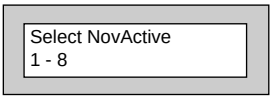
10) Press YES. The display will show for example:-



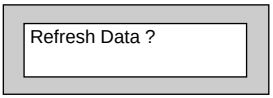
11) If no Novagard Active Sounders are fitted/programmed the display will return to step 5

Or

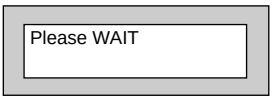
If at least one Novagard Active Sounder is fitted/ programmed the display will show:-



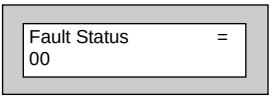
12) Press the number of the Novagard Active you wish to test. The display will show:-



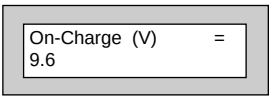
13) Press YES. The display will show:-



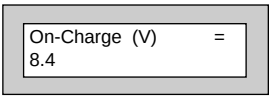
Then:-
00 = No Tamper 01 = Front Tamper
02 = Rear Tamper 03 = Front & Rear Tamper



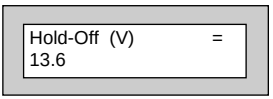
14) Press YES. The display will show for example:- (for Novagard Active battery)



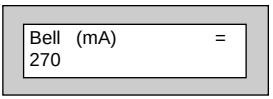
15) Press YES. The display will show for example:- (for Novagard Active battery)



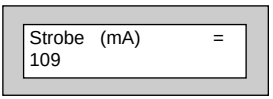
16) Press YES. The display will show for example:- (for Novagard Active hold-off volts)



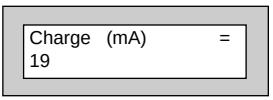
17) Press YES. The display will show for example:- (for Novagard Active sounder current)



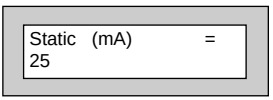
18) Press YES. The display will show for example:- (for Novagard Active strobe current)



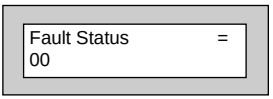
19) Press YES. The display will show for example:- (for Novagard Active charge current)



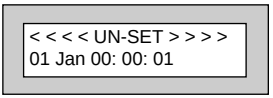
20) Press YES. The display will show for example:- (for Novagard Active quiescent current)



21) Press YES. The display will show for example:-



This concludes the Diagnostic Tests. To Escape Press 0 until the display shows:-



Note: If battery test is programmed other than 0 a battery test will be performed each time you escape from engineer mode.

Associated Products

Control Panels

01-120	Gardtec 590 Control Panel C/W Modem (Blank end station)
01-121	Gardtec 591 Control Panel C/W Modem (Blank end station)
Kit 590P	Gardtec 590 Control Panel C/W Modem & Contour LED RKP
Kit 591P LED	Gardtec 591 Control Panel C/W Modem & Contour LED RKP
Kit 591P LCD	Gardtec 591 Control Panel C/W Modem & Contour LCD RKP

Remote Keypads

01-148	Gardtec Contour LED RKP C/W ACE
01-150	Gardtec Contour LCD RKP C/W ACE
01-136	ACE Receiver

Accessories

01-096	End of Line Resistor Pack
01-107	Gardtec Remote Software Pack
01-130	ACE Transmitter (Keyfobs)
RS304 669	3m Telephone Line Cord (BT to RJ11) (RS Components part not available from Gardiner Technology Ltd)

A full range of equipment and accessories are available from Gardiner Technology Ltd
For your local branch call:-

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GARDINER TECHNOLOGY

Gardiner Technology Ltd

Queensway, Rochdale, OL11 1TQ. United Kingdom
Tel: 01706 510000 Fax: 01706 510100
International Tel: + 44 1706 510000 Fax: + 44 1706 510100

Internet: http://www.gardiner-technology.com
General e-mail: sales@gardiner-technology.com
Technical e-mail: technical@gardiner-technology.com

Technical Support: 01706 510200
Technical Support Fax: 01706 510204

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